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Practitioner's Docket No. 712-002.104/CC-0166 **PATENT**

JFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Michael A. Davis et al.
Application No.: 09 /703,823 Group No.: 2877
Filed: November 1, 2000 Examiner: Michael A. Lyons
For: Official System Featuring Chirped Bragg Grating Etalon For Providing Precise Reference Wavelengths

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SUPPLEMENTAL TRANSMITTAL OF APPEAL BRIEF (PATENT APPLICATION—37 C.F.R. § 1.192)

NOTE: The phrase "the date on which" an "appeal was taken" in 35 U.S.C. 154(b)(1)(A)(ii) (which provides an adjustment of patent term if there is a delay on the part of the Office to respond within 4 months after an "appeal was taken") means the date on which an appeal brief under § 1.192 (and not a notice of appeal) was filed. Compliance with § 1.192 requires that: 1. the appeal brief fee (§ 1.17(c)) be paid (§ 1.192(a)); and 2.the appeal brief complies with § 1.192(c)(1) through (c)(9). See Notice of September 18, 2000, 65 Fed. Reg. 56366, 56385-56387 (Comment 38).

1. Transmitted herewith, in triplicate, is the SUPPLEMENTAL APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on December 10, 2003.

NOTE: "Appellant must, within two months from the date of the notice of appeal under § 1.191 or within the time allowed for reply to the action from which the appeal was taken, if such time is later, file a brief in triplicate. . . " 37 C.F.R. § 1.192(a) (emphasis added).

CERTIFICATION UNDER 37 C.F.R. §§ 1.8(a) and 1.10*
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37 C.F.R. § 1.10 *

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Date: July 20, 2004

Signature

William J. Barber

(type or print name of person certifying)

** Only the date of filing (§ 1.6) will be the date used in a patent term adjustment calculation, although the date on any certificate of mailing or transmission under § 1.8 continues to be taken into account in determining timeliness. See § 1.703(f). Consider "Express Mail Post Office to Addressee" (§ 1.10) or facsimile transmission (§ 1.6(d)) for the reply to be accorded the earliest possible filing date for patent term adjustment calculations.*

2. STATUS OF APPLICANT

This application is on behalf of

☒ other than a small entity.

☐ a small entity.

A statement:

☐ is attached.

☐ was already filed.

3. FEE FOR FILING APPEAL BRIEF

Pursuant to 37 C.F.R. § 1.17(c), the fee for filing the Appeal Brief is:

☐ small entity	$165.00
☐ other than a small entity	$330.00

Supplemental
/**Appeal Brief fee due $** 0.00*

4. EXTENSION OF TERM

NOTE: 37 C.F.R. § 1.704(b) ". . .an applicant shall be deemed to have failed to engage in reasonable efforts to conclude processing or examination of an application for the cumulative total of any periods of time in excess of three months that are taken to reply to any notice or action by the Office making any rejection, objection, argument, or other request, measuring such three-month period from the date the notice or action was mailed or given to the applicant, in which case the period of adjustment set forth in § 1.703 shall be reduced by the number of days, if any, beginning on the day after the date that is three months after the date of mailing or transmission of the Office communication notifying the applicant of the rejection, objection, argument, or other request and ending on the date the reply was filed. The period, or shortened statutory period, for reply that is set in the Office action or notice has no effect on the three-month period set forth in this paragraph."

NOTE: The time periods set forth in 37 C.F.R. § 1.192(a) are subject to the provision of § 1.136 for patent applications. 37 C.F.R. § 1.191(d). See also Notice of November 5, 1985 (1060 O.G. 27).

NOTE: As the two-month period set in § 1.192(a) for filing an appeal brief is not subject to the six-month maximum period specified in 35 U.S.C. § 133, the period for filing an appeal brief may be extended up to seven months. 62 Fed. Reg. 53,131, at 53,156; 1203 O.G. 63, at 84 (Oct. 10, 1997).

The proceedings herein are for a patent application and the provisions of 37 C.F.R. § 1.136 apply.

(complete (a) or (b), as applicable)

(a) ☐ Applicant petitions for an extension of time under 37 C.F.R. § 1.136 (fees: 37 C.F.R. § 1.17(a)(1)-(5)) for the total number of months checked below:

Extension (months)	Fee for other than small entity	Fee for small entity
☐ one month	$ 110.00	$ 55.00
☐ two months	$ 420.00	$ 210.00
☐ three months	$ 950.00	$ 475.00
☐ four months	$ 1,480.00	$ 740.00
☐ five months	$ 2,010.00	$ 1,005.00

Fee: $_____

*PREVIOUSLY SUBMITTED

If an additional extension of time is required, please consider this a petition therefor.

(check and complete the next item, if applicable)

☐ An extension for _____ months has already been secured, and the fee paid therefor of $_____ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request $_____

or

(b) ☒ Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

5. TOTAL FEE DUE

The total fee due is:

Supplemental /Appeal brief fee $ 0.00

Extension fee (if any) $_____

TOTAL FEE DUE $ 0.00

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NOTE: If there is a fee deficiency and there is no authorization to charge an account, additional fees are necessary to cover the additional time consumed in making up the original deficiency. If the maximum six-month period has expired before the deficiency is noted and corrected, the application is held abandoned. In those instances where authorization to charge is included, processing delays are encountered in returning the papers to the PTO Finance Branch in order to apply these charges prior to action on the cases. Authorization to change the deposit account for any fee deficiency should be checked. See the Notice of April 7, 1986, *1065 O.G. 31-33.*

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SIGNATURE OF PRACTITIONER

William J. Barber

(type or print name of practitioner)

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PATENT
File No.: 712-002-104/CC-0166

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Re application of: Michael A. Davis et al.

Serial No.: 09/703,823 : Examiner: Michael A. Lyons

Filed: November 1, 2000 : Group Art Unit: 2877

For: OPTICAL SYSTEM FEATURING CHIRPED BRAGG GRATING ETALON FOR PROVIDING PRECISE REFERENCE WAVELENGTHS

MAIL STOP APPEAL BRIEFS &NDASH; PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

REQUEST FOR REINSTATEMENT OF APPEAL AND SUPPLEMENTAL BRIEF FOR APPELLANTS

Sir:

This is a request for reinstatement of an appeal in accordance with 37 CFR §1.193(b)(2) and a supplemental brief filed in support thereof.[1]

Procedural Summary

As a procedural summary, a notice of appeal was submitted on December 8, 2003 in response to an Official Action mailed August 7, 2003, made final, including an Advisory Action mailed October 28, 2003. On February 10, 2004, Applicants submitted an Appeal Brief, the subject matter of which is hereby incorporated by

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[1] I hereby certify that this correspondence is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Commissioner for Patents, Alexandria, VA 22313-1450.

William J. Barbey — July 20, 2004
Date

reference in its entirety. On April 20, 2004, the Patent Office mailed a new Office Action, made final, reopening the prosecution. This request for reinstatement of the appeal and the supplemental brief is submitted in response to the new points made in April 20th Office Action.

Response to New Points Made

In the April 20th Office Action, claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kringlebotn (United States Patent No. 6,097,487) in view of Farhadiroushan (United States Patent No. 5,754,293) and further in view of Galvanauskas et al. (United States Patent No. 5,499,134). However, as stated in footnote no. 2 of Applicants' February 10th Appeal Brief, Galvanauskas et al. has been considered a part of the proposed combination by the undersigned attorney all along, forming the basis of the rejection of the subject matter of the claims in the August 7th Final Rejection. In view of this, the basis for the prior art rejection of claims 1-20 in the April 20th Office Action has not changed in relation to the basis set forth in the August 7th Final Rejection.

In the February 10th Appeal Brief, pages 6-15, Applicant's provided a detailed response to the reasoning in support of the rejection of claims 1-20 based on the application of these references in the August 7th Final Rejection. The remarks herein

supplement the remarks in Applicants' February 10th Appeal Brief, as well as addressing any new points being made, as follows:

The whole thrust of the claimed invention is to provide an optical system that uses a chirped etalon that responds to a broadband signal for providing multiple precise reference signals that include multiple spikes as shown in Figures 4a, 5b, etc. of the instant patent application.

In the April 20th Office Action, the reasoning states on page 3, sole paragraph, that the abstract and column 4, lines 49-50 of the specification are "leaving open the possibility that the reference grating [element 5 in Figure 1] is comprised of a plurality of Bragg gratings." However, in response thereto, it is respectfully submitted that this reasoning completely overlooks the fact that, in addition to that shown in Figure 1, Kringlebotn also discloses a measuring device either using multiple gratings having the same wavelength in Figure 4 (which is clearly based on the device in Figure 1), or using multiple gratings having different wavelengths in Figure 5 (which is also clearly based on the device in Figure 1), as described in Kringlebotn, column 5, line 33, through column 5, line 10. In operation, each grating in Kringlebotn provides one reference signal with one spike.

Moreover, the reasoning in the April 20th Office Action also overlooks the fact that Farhadiroushan merely discloses a sensing device using multiple etalons having different wavelengths, each

etalon formed by a respective grating pair with the same wavelength, for sensing a parameter at different locations. In operation, each etalon in Farhadiroushan provides one reference signal, i.e. one spike, similar to Kringlebotn.

In view of this similarly, it is respectfully submitted that, clearly, Kringlebotn and Farhadiroushan both use either one grating for providing one reference signal, or one etalon for providing one reference signal. **In addition, and in complete contrast, clearly neither Kringlebotn nor Farhadiroushan discloses or even remotely suggests either using one grating for providing multiple precise reference signals, or using one etalon for providing multiple precise reference signals, which is the whole thrust of the claimed invention.** It is respectfully submitted that the reasoning in the April 20th Office Action completely overlooks this fundamental deficiency in the teaching of the Kringlebotn/Farhadiroushan proposed combination.

For this reason, the Kringlebotn/Farhadiroushan proposed combination simply cannot result in the claimed invention, even if one were motivated to combine and/or modify these two references in the manner proposed. In comparison, the claimed optical system is able to provide multiple precise reference signals from such an etalon structure because it has a chirped etalon. **Clearly, neither Kringlebotn nor Farhadiroushan even remotely suggests using such an etalon structure to provide such multiple precise reference signals, as claimed herein.**

Furthermore, to supplement the point made in Applicants' February 10th Appeal Brief, pages 6-15, there is clearly no motivation to combine Kringlebotn and Farhadiroushan in the manner proposed, because Farhadiroushan **expressly teaches** away from using one etalon for providing multiple reference signals, instead teaching to use a plurality of etalons each having a different respective wavelength for sensing a parameter at different locations. In other words, each etalon is spatially separated at a different location in order to separately sense a parameter at each different location.

Nevertheless, the reasoning in the April 20th Office Action looks to further modify the Kringlebotn/Farhadiroushan proposed combination by substituting Galvanauskas' chirped gratings for the gratings already in Farhadiroushan's etalon. The reasoning in the April 20th Office Action, page 4, paragraph 2, incorrectly bases this proposed substitution, modification and/or combination on some perceived need "to better facilitate the passage of a spectrum of wavelengths through the etalon as per the claimed invention for a reference measurement, as the use of chirped Bragg gratings offer 'unprecedented compactness, robustness, and system efficiency'", citing Galvanauskas' abstract, lines 7-8. However, it is respectfully submitted that one of ordinary skill in the art would not be motivated or desire to modify the Kringlebotn/Farhadiroushan proposed combination in this manner because one would not be motivated or desire to sense or measure

multiple reference signals at Farhadiroushan's or Kringlebotn's different sensing or measuring locations using an etalon having Galvanauskas' chirped grating. The reasoning in the April 20th Office Action overlooks this fact. Because of this, the reasoning in support of this substitution, modification and/or combination of the Kringlebotn/Farhadiroushan proposed combination is nothing more than hindsight reconstruction after the Patent Office has had the benefit of reading Applicants' patent application.

For all these reasons, in addition to those already presented in Applicants' February 10th Appeal Brief, pages 6-15, it is respectfully submitted that the Kringlebotn/Farhadiroushan/Galvanauskas proposed combination does not, and cannot, result in the claimed invention, and that one of ordinary skill in the art would not be motivated or desire to combine and modify the subject matter of these three cited references in the manner proposed. It is respectfully submitted that the reasoning in the April 20th Office Action overlooks this fundamental deficiency in the reasoning that supports the Kringlebotn/Farhadiroushan/Galvanauskas proposed combination.

Response to New Points on Page 7, Second Paragraph, Through Page 8

In the April 20th Office Action, the reasoning presents some new points on page 7, second paragraph, through page 8. This is a reply to these new points.

The Point on Page 7, Second Paragraph

The point on page 7, second paragraph, states that claims 4 and 20 are not argued separately.

In response thereto, it is respectfully submitted that, consistent with that stated in Applicants' February 10th Appeal Brief, pages 3-4, claim 4 recites an optical system according to claim 1, wherein the precise set of the optical reference signals includes a series of peaks covering most of a source spectral width of the broad optical source signal with the power at the beginning and end of the spectrum passed unaffected by the chirped Bragg grating etalon due to the limited bandwidth thereof; while claim 20 recites an optical source according to claim 1, wherein the precise set of the optical reference signals includes a series of peaks covering most of a source spectral width of the broadband source; and the broadband source has a spectrum and the power at the beginning and end of the spectrum is passed substantially unaffected by the chirped Bragg grating etalon.

The reasoning in the April 20th Office Action now points to Galvanauskas for teaching these features of the claimed invention.[2] However, consistent with that set forth above, it is respectfully submitted that Galvanauskas neither teaches or

[2] In the August 7th final rejection, the reasoning took the position that these features were well known in the art without citing Galvanauskas.

suggests the features of the claimed invention set forth in claim 4 and 20, nor would one of ordinary skill in the art be motivated or desire to combine the selective teaching of Galvanauskas with the Kringlebotn/Farhadiroushan combination in the manner proposed. For example, Galvanauskas does not even remotely suggest to use a chirped grating in the manner set forth in claims 4 and 20, especially to solve the problem in the art being addressed by the inventors. Clearly, Kringlebotn and Farhadiroushan are totally silent on this issue as well. It is respectfully submitted that the reasoning in the April 20th Office Action completely overlooks this fact, and does not look at Galvanauskas' **teaching as a whole.**

The Point on Page 7, Third Paragraph

In response to the point on page 7, third paragraph, and consistent with that discussed above, it is respectfully submitted that Kringlebotn clearly discloses that the measuring device either uses multiple gratings having the same wavelength in Figure 4 (which is based on the device in Figure 1), or uses multiple gratings having different wavelengths in Figure 5 (which is also based on the device in Figure 1), as described in Kringlebotn, column 5, line 33, through column 5, line 10. In operation, each grating in Kringlebotn provides one reference signal with one spike. It is respectfully submitted that the reasoning in the April 20th Office Action completely overlooks

Kringlebotn's **teaching as a whole**, including the fact that Kringlebotn discloses devices using multiple gratings in Figures 4-5, instead choosing to rely on the Kringlebotn device in Figure 1 that only uses a single grating 5, which has nothing whatsoever to do with the whole thrust of the claimed invention.

The Point on Page 8, First Paragraph

In response to the points on page 8, first and second paragraphs, and consistent with that discussed above, it is respectfully submitted that, clearly, Kringlebotn and Farhadiroushan both use either one grating for providing one reference signal, or one etalon for providing one reference signal. **In addition, and in complete contrast, clearly neither Kringlebotn nor Farhadiroushan discloses or suggests either using one grating for providing multiple precise reference signals, or using one etalon for providing multiple precise reference signals, which is the whole thrust of the claimed invention.** In view of this, it is respectfully submitted that any such substitution and/or modification of Farhadiroushan's etalon for Kringlebotn's reference Bragg grating does not result in **using one grating for providing multiple precise reference signals, or using one etalon for providing multiple precise reference signals, which is again the whole thrust of the claimed invention.** There is still an important piece of the claimed invention that is still missing and must somehow be filled in.

Galvanauskas' teaching **as a whole** does not make up for the fundamental deficiency in the teaching of the Kringlebotn/Farhadiroushan proposed combination in relation to this missing piece of the claimed invention. For example, as discussed in Applicants' February 10th Appeal Brief, pages 3-4, the use of an etalon formed by broadband fiber Bragg grating pairs as shown in Figure 1 of the patent application results in a very limited set of resonant frequencies, as described in the patent application on page 2, line 20, through page 3, line 3. For example, if a resonant optical frequency is outside a very limited region, the light will pass through the fiber Bragg grating etalon cavity unaffected. For a set of reference optical frequencies, the unaffected light is most undesirable and would merely result in the provision of a very limited spectrum of optical reference signals. The use of a multiplicity of etalons formed from a series of broadband fiber Bragg grating pairs in order to overcome this problem raises a whole different set of problems, including issues related to the differing temperature sensitivities of the multiplicity of etalons formed from the broadband fiber Bragg grating pairs.

Clearly, Galvanauskas' does not recognize this problem in the art, or even remotely suggest a solution to the same.

Instead, the inventors were the first to recognized the aforementioned problem in the art and provided said solution to the same. To solve this problem, the inventors designed an

optical system featuring a chirped Bragg grating etalon that responds to the broadband optical signal, for providing a chirped Bragg grating etalon optical signal having a precise set of optical reference signals, as recited in claim 1. The precise set of the optical reference signals includes a series of peaks covering most of a source spectral width of the broadband source with the power at the beginning and end of the spectrum of the broadband source passed substantially unaffected by the chirped Bragg grating etalon, as recited in dependent claim 20 (See also dependent claim 4).

In effect, the whole thrust of the claimed invention is to use a broadband source in combination with a chirped Bragg grating etalon in order to provide a precise set of optical reference signals having a broad spectrum of frequencies of interest. As a person skilled in the art would appreciate, the use of the chirped Bragg grating etalon to provide the desired series of peaks covering most of the source spectral width of the broadband source substantially eliminates the differing temperature sensitivities problem that might otherwise occur with the use of the multiplicity of etalons formed from the broadband fiber Bragg grating pairs like that of the prior art shown in Figure 1 of the patent application.

Nothing in Farhadiroushan, Kringlebotn, Galvanauskas, alone or in combination, or anything else on the record for that matter, even remotely suggests combining the teaching of these

references to solve the aforementioned problem. In complete contrast, neither Farhadiroushan, Kringlebotn, Galvanauskas even remotely recognizes this problem in the art. Instead, the reasoning in the April 20th Office Action is piecing together selective teachings from the different cited references, and overlooking the teaching of each reference **as a whole**.

In view of this, it is respectfully submitted that only the present patent application provides the motivation or desire to combine, substitute and/or modify the teaching of Farhadiroushan, Kringlebotn, Galvanauskas in the manner proposed, which smacks of hindsight reconstruction.

Conclusion

Consistent with that stated in Applicants' February 10th Appeal Brief, pages 6-15, it is respectfully submitted that the proposed combination of Kringlebotn in view of Farhadiroushan and further in view of Galvanauskas does not teach or suggest an optical system featuring a chirped Bragg grating etalon that responds to a broadband optical signal, for providing a chirped Bragg grating etalon optical signal having a precise set of optical reference signals, as recited in claim 1. Moreover, it is respectfully submitted that the prior art does not even remotely suggest why one of ordinary skill in the art would be motivated first to combine features of Kringlebotn's optical measuring device with features of Farhadiroushan's sensing

device, then further modify the proposed combination by substituting Galvanauskas et al.' chirped Bragg gratings for Farhadiroushan's non-chirped inline fiber Bragg grating pairs, in order to end up with the claimed optical system for providing a precise set of reference signals, especially to solve the problem in the art being addressed by the inventors related to the use of broadband fiber Bragg grating pairs for providing such precise reference signals. None of the cited references even recognize the problem being solved by the inventors or suggest a solution thereto. Instead, the reasoning in the April 20th Office Action is completely overlooking the teaching of the cited references **as a whole**, and piecing together selective parts of different references that neither recognizes the problem that needed to be solved in the prior art, or even remotely suggests the solution provided by the Applicants' with the claimed invention. In view of this, it is respectfully submitted that the reasoning in the April 20th Office Action rejecting claims 1-20 is in error, and should be reversed.

Respectfully submitted,

William J. Barber
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Registration No. 32,720

WJB/dap
July 20, 2004